What is claimed is:

1. A digital hearing impairment simulation method comprising the steps of:

(S1) inputting a hearing characteristic table of a hearing impaired person and storing the input table in a memory, in order to model the hearing characteristics of the hearing impaired person;

(S2) calculating a hearing loss table representing the difference between the hearing characteristic table of the hearing impaired person and a pre-stored hearing characteristic table of a normal person, and storing the calculated hearing loss table in said memory;

(S3) converting an audio signal input via an audio input portion to a digital signal and storing the converted digital signal in said memory;

(S4) converting said converted digital signal to the frequency domain signal using a fast Fourier transform algorithm;

(S5) calculating an average power for each of critical bands of said signal converted to the frequency domain;

(S6) calculating a hearing loss gain for each critical band, using said hearing loss table and said average powers of the critical bands;

(S7) calculating coefficients for a digital filter corresponding to said hearing loss gains of the critical bands;

(S8) digitally filtering the input signal converted to a digital signal and stored in said memory in said step (S3) using said digital filter coefficients; and

(S9) converting said digitally filtered signal to an analog signal and outputting the converted analog signal to an audio output portion.

2. The digital hearing impairment simulation method as claimed in claim 1, wherein said fast Fourier transform algorithm in said step (S4) is a 50% overlapped, 128 point fast Fourier transform algorithm having a sampling frequency of 12kHz.

3. The digital hearing impairment simulation method as claimed in claim 1, wherein said critical bands in said step (S5) are 20 bands increasing in size exponentially from a low frequency band to a high frequency band.

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4. The digital hearing impairment simulation method as claimed in claim 2, wherein said critical bands in said step (S5) are 20 bands increasing in size exponentially from a low frequency band to a high frequency band.

5. The digital hearing impairment simulation method as claimed in claim 1, wherein said steps (S4) through (S9) are performed in units of a block consisting of 128 samples.

6. The digital hearing impairment simulation method as claimed in claim 1, wherein said digital filter in said step (S8) is a frequency sampling filter.

7. A method for evaluating the performance of a hearing aid using a digital hearing impairment simulation method, said method comprising the steps of:

(S1) generating predetermined sound using an audiometer which is a sound source;

(S2) outputting the sound generated from said audiometer through said hearing aid;

(S3) converting the sound output from said hearing aid to sound reflecting the hearing characteristic of a hearing impaired person using a digital hearing impairment simulator which performs a digital hearing impairment simulation method, and outputting the converted sound; and

(S4) allowing a normal hearing person to listen to the sound output in step (S3) and checking the reaction of the listener to evaluate the performance of said hearing aid, wherein said step (S3) includes the sub-steps of:

(S3-1) inputting a hearing characteristic table of a hearing impaired person and storing the input table in a memory to model the hearing characteristic of the corresponding hearing impaired person;

(S3-2) calculating a hearing characteristic table using the difference value obtained by comparing the hearing characteristic table of the hearing impaired person with that of a normal person which is previously stored and stored in the memory;

(S3-3) inputting the audio signal output from the hearing aid to an audio input portion and converting the input signal to a digital signal and storing the same in the memory;

(S3-4) converting the digital signal in step (S3-3) to a frequency domain using fast Fourier transform algorithm;

(S3-5) calculating the average power by critical band of the signal which is converted to the frequency domain;

(S3-6) calculating hearing loss gain using the hearing loss table and the average power by critical band;

(S3-7) calculating a coefficient for a digital filer corresponding to the hearing loss gain by critical band;

(S3-8) digitally filtering the signal converted to a digital signal and stored in the memory in step (S3-3) using the coefficient for a digital filter; and

(S3-9) converting the digitally filtered signal to an analog signal and outputting the converted signal to an audio output portion.

8. The method for evaluating the performance of a hearing aid using a digital hearing impairment simulation method as claimed in claim 7, wherein, in said step (S4), the performance of said hearing aid is evaluated by measuring the sound output from said digital hearing impairment simulator using a measuring instrument.